

tinguished from instar 5 by difference in colour. Considerably larger than instar 4 and, on changing to instar 5, initially far larger with a larger head than larvae which have passed directly to instar 5 from instar 4.

Instar 5: (10 days—15 in the case of a larva from instar 4A)

Conspicuous shiny brown "warts" as big as a pins head on anal segment and segment behind head. Underside powder-blue. On sides, diagonal forward-sloping bands of lilac, white and bright leaf green. On back, a wide band of pinkish-brown, narrowing between segments, very dark in some forms and very light in others. Both instar 4 and instar 4A seem to pass into this form.

Pupa: (26 days)

Larvae burrowed in compressed tissue to pupate. When due for pupation larvae turn rose-pink on the back and sides, blue-green below. Emergence appears to be always at about 8 p.m.

Larvae passing through six instars have always turned out to be very large females. Small females from five-instar larvae occur as well and the large: small ratio of bred females irrespective of foodplant appears to be 50/50. Females caught in light traps are predominantly large and large females in captivity appear to be far more active than small females. It might reasonably be supposed that the large female possesses much larger food reserves than her smaller sister and hence is more readily able to undertake dispersal flights after mating, appearing in light traps in larger numbers than the relatively sedentary small females. Thus the large female seems to be the agent responsible for dispersal. However, until more data is available, one may only offer this hypothesis tentatively.

Stridulation:

On several occasions male *P. jordana* have been observed making curious abdominal movements and emitting a high-pitched rasping noise. The usual circumstance in which this has been observed is when a male has settled on a wall or a plant near an MV light and is disturbed in the early morning. Movement entails the retraction and extrusion of the valves from the terminal abdominal segment and stridulation appears to be produced by contact of the ventral edges of the valves with the edge of the terminal sternite. The purpose of this behaviour is a matter of conjecture; the colouring of *P. jordana* is quite possibly aposematic (forewings mottled grey, hindwings rich brownish red) but stridulation is not associated with any form of hindwing display. It is interesting to note that stridulation is similar to that observed in *Psilogramma menephron* by G. C. Varley and H. S. Robinson in Malaya.

Lepidoptera from the Maltese Islands

By C. De Lucca

My last contributions to the study of the Maltese Lepidoptera appeared in 1956 (*Entomologist*, 89: 253-256, October 1956) and 1965 (*Rapports et Procès-verbaux de réunions de la C.I.E.S. M.M.*, Vol. 18 (2), Monaco 1965). Owing to rather heavy duties I was not able to do more research in this field since that time. Collecting continued to be done, however, and although it was carried out in a rather sporadic manner, it has yielded a good number of Heterocera and Microlepidoptera. I was recently able to go over the specimens and as work on them progressed

it was realised that a proportion of the catches were new to the Maltese Islands. Other specimens were rare or very rare, by present day standards, but only conventional methods of capture were used, i.e. light and sugaring but no mercury vapour traps. In addition to my own work, specialists in various groups have undertaken the task of determination of the specimens, and I wish to express my thanks to all of them—H. G. Amsel, L. Bigot, Ch. Boursin, J. D. Bradley, D. S. Fletcher. It is now possible to put together the results of these researches.

The variety of the species recorded continues to emphasise the fact that the Maltese Islands, whilst rather poor in the number of the regular different species, like most small islands situated at no great distance from the mainlands, have a high proportion of occasional or rare species. This fact tends to be particularly true when one considers that the Maltese Islands are distant sixty miles from Sicily, which is much richer in Lepidoptera, about two hundred miles from the nearest Tripolitanian coast, and about one hundred and twenty miles from Cap Bon in Tunisia, these two North African regions containing again a much richer fauna, both in number and variety.

SYSTEMATIC LIST

Heterocera

- Malacosoma neustria* Linnaeus (Lasiocampidae). One specimen at Naxxa in the summer of 1956.
- Amathes xanthographa* Denis & Schiffermuller (Noctuidae, Noctuinae). One specimen caught by Mr P. Sammut at Rabat on November 14 1965.
- Hadena bicruris* Hufnagel (Noctuidae, Hadeninae). One specimen at light near Gharghur on June 24, 1956.
- Polia corsica* Rambur (Noctuidae, Hadeninae). Single specimens were taken on one occasion in April 1951, and in March and April 1960. The specimens have been referred by Boursin to the form *weissii* Draudt.
- Bryophila pallida* Bethune-Baker (Noctuidae, Apatelinae). Not uncommon at Buskett, near Rabat, in October, but it seldom comes to light. It is distributed in the Mediterranean region.
- Xanthodes albago* Fabricius (Noctuidae, Westermanniinae). One specimen at Sliema in August 1965.
- Horisme scorteata* Staudinger (Geometridae, Larentiinae). One specimen on December 20, 1965, at a locality called Maddalena, very near Gharghur.
- Horisme tersata* Staudinger (Geometridae, Larentiinae). One specimen caught at Gharghur on November 22, 1960. It belongs to the form *tersulata* which ranges in North Africa but is also recorded from Sicily. In an earlier paper (*Ent. Mon. Mag.*, 84: 192, July 1948) recorded also *Horisme exoletata* which besides on Malta has so far been recorded only from Sicily. The food plant of the *Horisme* species is the *Clematis*, and there are two shrubs of *Clematis cirrhosa* growing wild at Wied id-dis. near Gharghur.
- Sterrha laevigata* Scopeli (Geometridae, Sterrhinae). One specimen at Maddalena on September 18, 1957.

Sterrha fatimata Staudinger (Geometridae, Sterrhinae). A North African species. One specimen came to light at Gnejna, near Mgarr, on August 31, 1956, and another was caught at Lunzjata, Gozo, on September 13, 1957.

Scopula ornata Scopoli (Geometridae, Sterrhinae). One specimen at Ta'Qali on September 8, 1957.

Scopula flaccata Staudinger (Geometridae, Sterrhinae). One specimen came to light at Gharghur on June 21, 1960.

Scopula incarnaria Herrich-Schaeffer (Geometridae, Sterrhinae). One specimen caught by Mr. P. Sammut near Rabat on August 21, 1965.

Microlepidoptera

Ancylolomia tentaculella Hubner (Crambidae, Crambinae). This species was not uncommon at Ta'Qali on September 8, 1957. Thirteen specimens were captured.

Tollia pectinatella Zeller (Crambidae, Crambinae). One specimen caught on the same night and from the same place as *tentaculella*. The place consists of flat country covered all over with short grasses.

Evergestis renatalis Oberthur (Pyraustidae). One specimen caught by Mr. P. Sammut at Rabat on March 20, 1966.

Cataonia erubescens Chretien (Pyraustidae). One specimen at light near Melleha on September 1, 1957.

Aciptilia spicidactyla Chretien (Pterophoridae). A new form peculiar to the Maltese Islands, and named *insularis* was described by L. Bigot (*Lambillioinea*, 61, No. 7-8, p 49-51) from specimens which I found at Gharghur, Melleha and Gnejna from 1953 to 1960; it is therefore widespread in Malta. The type is in my collection, the paratypes in my collection and that of Mons. Bigot. The form is remarkable for its small size in comparison to the normal race found elsewhere on the Continent. It may perhaps merit specific status.

Leioptilus carphodactylus Hubner (Pterophoridae). Three specimens at the Salina, Malta, on November 20, 1950. Another one was caught from the same place on March 28, 1960.

Stenoptilia pelidnodactyla Stein (Pterophoridae). One specimen near Chambray, Gozo, on September 9, 1954.

Fatmocelina mauritanica Baker (Gelechiidae). A species found in North West Africa. One specimen was captured at Maddalena on May 22, 1960.

Cherocampa (Borkhausenia) lunaris Haworth (Gelechiidae). One specimen at Maddalena on May 14, 1960. The species is found over Central and Southern Europe.

Thysostoma (Stathmopoda) guerini Stainton (Cosmopterygidae). One specimen at Lunzjata Valley, Gozo, on September 13, 1957.

Coleophora versurella Zeller (Coleophoridae). This species is not rare at Melleha during September.

Coleophora binotapennella Duponchel (Coleophoridae). One specimen on September 8, 1957, at Melleha. The larvae of this and the preceding species (*versurella*) live on *Atriplex* and *Chenopodium*, plants which are common at the locality mentioned, which is a seaside one. Stainton says that *binotapennella* lives also on the

branches of *Salicornia herbacea*, a halophilous plant which is common at Melleha locality known as Ghadira and which is near the sea.

Paratinea merdella Zeller (Tineidae). One specimen at Gharghur on June 20, 1957.

Besides the above species, which as far as I can ascertain are new to the Maltese Islands, the following species which are considered rare at present have also been captured over the same period of years: *Agrotis spinifera*, *A. leucogaster*, *Mythimna unipuncta*, *Mythimna bicolorata*, *Mythimna L-album*, *Epia silenes*, *Earias insulana*, *Aegle vespertalis*, *Thalerastria bipartita*, *Autophila dilucida*, *Scopula marginepunctata*, *Eupithecia breviculata*, *Eupithecia phoeniciata*, *Pyrausta nubialalis*, *Actenia brunnealis*. The remarkable species *Homoeosoma saxicola* has also been met with several times.

10 Church Square, Gharghur, Malta, G.C.

Insects collected under a Swallow's Nest in Lincolnshire

By O. M. WHITE

During July 1953 a pair of swallows (*Hirundo rustica*) nested in an outbuilding at the Gibraltar Point (Lincolnshire) Nature Reserve, and after each visit of a parent to the three young some insects would drift down from the nest, still alive but unable to fly, and drop on a concrete slab underneath, from which I collected 86 such specimens between July 22 and 25. Damage to the insects varied from slight (*Haematopota*) to extensive (*Chironomus*—antennae and some legs missing). All except one were adults.

At about 0845 GMT on July 25 the last of the young birds flew and no more insects could be found under the nest. At 0945 a thermometer was placed by the nest and registered 69°F, 5° warmer than outdoors. The basic nest material then seemed hard and dry, and there was no visible sign of any puparia, which, I thought, might have been included among the mud used in building, and I concluded that the insects concerned must have been among the airborne prey brought to the nest by one or both parents and intended as food for the young, but for some reason were dropped, perhaps carelessness, or the young may have been fully fed.

The area in the swallows' foraging range included habitats from coastal to agricultural land. The weather during these four days was fair to fine in daylight, excepting slight rain on July 22.

The insects are listed at the foot of the note, and they include several species additional to the preliminary county list (1). The nomenclature follows the available *Handbooks* and Kloet and Hincks' *Check List*, excepting *Pammene aurantiana* Staud., an account of which appeared in *Ent. Rec.*, 69: 205.

Having obtained permission from the Trust, I collected diptera in the Reserve also by searching and selective sweeping during the rest of this week, obtaining there nine of the same species as were taken by the swallows.